

Notice of Allowability

Application No.

10/821,931

Examiner

Richard Franklin

Applicant(s)

KOHASHI, YASUO

Art Unit

2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 12 April 2004.
2. ☒ The allowed claim(s) is/are 1-13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

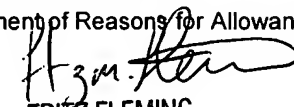
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 7/9/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


FRITZ FLEMING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

11/21/2006

DETAILED ACTION

1. Claims 1 – 13 are pending.

Allowable Subject Matter

2. Claims 1 – 13 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Claims 1, 7, 10, 12, and 13 are allowed because the prior art of record fails to teach alone or in combination ***a first bus; a first DMA controller operable to connect with the first bus; a second bus; a second DMA controller operable to mutually connect the first and second bus; wherein the first DMA controller is operable to arbitrate data transfer between a first memory and a second memory, after requesting the second DMA controller; and wherein the second DMA controller is operable to arbitrate data transfer between the second memory and a first memory buffer on the second bus and data transfer between the second memory and a second buffer memory on the second bus***, as required by the independent claims, ***in combination with the other recited claim limitations*** (emphasis added).

Method claims 12 and 13 rely upon and require the structure above to carry out the claimed methods. US Patent No. 6,754,724 (hereinafter Horikawa) teaches a first and second bus (Horikawa; Figure 1 Items "MB" and "SB"); a first DMA controller (Horikawa; Figure 1 Item 5); and a second DMA controller (Horikawa; Figure 1 Item 10). However, Horikawa does not teach that the second DMA controller mutually connects the first bus and the second bus. Horikawa also does not teach the arbitration by the DMA

controllers as required by the independent claims. US Patent Application Publication No. 2003/0084226 (hereinafter Barrenscheen) teaches a first and second bus (Barrenscheen; Figures 2 – 3 Items “Bus 1” and “Bus 2”) and a second DMA controller (Barrenscheen; Figures 2 – 3 Item “DTU”) that mutually connects the first and second bus. The second DMA controller also arbitrates data transfer between multiple modules located on the same bus (Barrenscheen; Figure 2A). However, Barrenscheen does not teach a first DMA controller attached to the first bus. The combination of Horikawa and Barrenscheen would not have been obvious to one of ordinary skill at the time the invention was made and would not have yielded the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

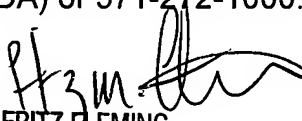
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Franklin whose telephone number is (571) 272-0669. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Fritz Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Patent Examiner
Art Unit 2181


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